

REMARKS

Claims 1, 3-4, 6, 8-11, 13-14, 16-19, 21-29, 31, 34, 36-42, and 44 remain in this application with claims 1, 26 and 39 in independent form. Claims 1, 6, 8-9, 14, 26, and 39 have been amended. Claims 2, 5, 7, 12, 15, 20, 30, 32-33, 35, 43, and 45-46 have been cancelled. No new matter is believed to be introduced by way of these amendments.

Applicant has previously submitted a Supplemental IDS on February 24, 2006 pursuant to 37 CFR § 1.704(d). The Supplemental IDS contained references from a communication in a corresponding foreign application which was not received by any individual designated in 37 CFR § 1.56(c) more than 30 days prior to filing of the Supplemental IDS. The Supplemental IDS was submitted prior to the subject response in order to comply with Applicant's duties under 37 CFR § 1.704(d). The references cited therein are discussed below in more detail after the remarks relating to the current Office Action.

Claims 1-4, 6, 8-14, 16-19, 21-31 and 34-44 stand rejected under 35 U.S.C. §112, first paragraph. Applicant has amended the claims and the specification to correct an error that occurred in identifying the curing component. Specifically, the curing component was previously further defined as a third polyol, whereas the proper identification should have been polyether amine. As indicated by the Examiner, the specification supports polyether amines, as now claimed, such as Jeffamines T-403 and D-2000. As appreciated by those of ordinary skill in the art, polyether amines are well known to have equivalent hydroxyl numbers.

The hydroxyl number has also been amended to recite "equivalent hydroxyl number." It is to be further appreciated by those of ordinary skill in the art that the term

“equivalent hydroxyl number” may also include hydroxyl groups of the curing component. It is respectfully submitted that there is full support in the specification as originally filed to support these amendments.

Applicant has also amended claims 8 and 9. Specifically, these claims have been amended to recite that the polyether amine is either tri-functional or di-functional, respectively. It is respectfully submitted that there is full support in the specification as originally filed to support these amendments. Accordingly, the §112 rejection is believed to be overcome.

Claim 14 stands rejected under 35 U.S.C. §112, second paragraph. Claim 14 has been amended to recite an end molecular weight value that is commensurate in scope with that of claim 1. Accordingly, the §112 rejection is believed to be overcome.

Claims 1-4, 6, 8-14, 16-19, 21-31 and 34-44 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Stone (United States Patent No. 5,006,569) in view of Nodelman et al. (United States Patent No. 6,586,487).

Applicant has amended claims 1, 26, and 39. Specifically, each of the independent claims has been amended to recite the first polyol is present in an amount of from 5 to 25 parts by weight based on 100 parts by weight of the resin component and the curing component is present in an amount of from 2 to 15 parts by weight based on 100 parts by weight of said resin component and comprising a polyether amine having at least one primary amine group, an equivalent hydroxyl number of from 20 to 800, and a number-average molecular weight of from 150 to 5000. The combination of the blowing agent, the first polyol, the second polyol, and the curing component, as now claimed, improves rise, gel, and cure times of the polyurethane foams formed therefrom. This improvement reduces and/or eliminates dripping when the components are sprayed.

Further, primary amines of the curing component contribute to the open cells of the polyurethane foam which is believed to decrease water absorption.

Referring to claims 26 and 39, as amended, and as discussed in paragraph [0027] of the specification as originally filed, when the resin component and the isocyanate component are sprayed at these volumetric ratios and at the associated isocyanate index, the primary amine groups are present in an amount such that unreacted hydroxyl groups remain in the foam, thus dripping is reduced and/or eliminated if the polyurethane foam is burned. This makes the polyurethane foam more useful than other prior art low density foams because the polyurethane foam meets various flammability safety standards. The reduced dripping has not been previously been possible with polyurethane foams that have a lower density, especially when sprayed at volumetric ratios of 1:1, and as such the prior art low density foams do not meet the various flammability safety standards.

The Examiner relies on Stone for preparation of polyurethane foams with reactive additives. It is important to note that the reactive additive disclosed in Stone are liquid salts. The liquid salts are formed from the reaction of CO₂ with a water soluble amine. In other words, Stone teaches away from using the water soluble amines without reacting with CO₂. Further, various examples that incorporate polyether amines having at least one primary amine group that have not been converted to the liquid salt, specifically Tables 3, 4, and 8, produced unstable foams that physical data could not be obtained from. Whereas, those same examples having the polyether amines present as the liquid salts produced stable results. As such, Stone teaches away from using the polyether amines that are not converted to the liquid salt. Further, Stone does not disclose, teach, or suggest the unique combination of the blowing agent, the first polyol, the second polyol, and the curing component, as now claimed.

Referring now to Nodelman et al., reliance on Nodelman et al. does not satisfy the requirements for establishing a *prima facie* case of obviousness. Specifically, Nodelman et al. does not disclose, teach, or suggest, the unique combination of the blowing agent, the first polyol, the second polyol, and the curing component, as now claimed. Further, there is no suggestion or motivation present in Nodelman et al. to modify the teachings to arrive at the subject invention as claimed. Therefore, it is respectfully submitted that the §103 rejection is overcome and claims 1, 26, and 39, as now amended, are believed to be allowable. Claims 3-4, 6, 8-11, 13-14, 16-19, 21-25, 27-29, 31, 34, 36-38, 40-42, and 44, which depend directly or indirectly from these independent claims, are also believed to be allowable.

Referring now to the Supplemental IDS submitted February 24, 2006, none of the cited references, which included United States Patent No. 5,340,900 to Spitzer et al., United States Patent Application Publication No. 2002/0169227 A1 to Allen et al., United States Patent Application Publication No. US 2002/0035165 A1 to Bruchmann et al., disclose or teach the subject invention as claimed.

The '227 publication discloses rigid polyurethane foams that are characterized by high densities of from 7 to 35 pounds per cubic foot, whereas the subject invention is directed towards a foam having a density of less than 1 pound per cubic foot. The '227 publication does not disclose each and every feature of the invention as claimed. Specifically, the '227 publication does not disclose, teach, or suggest, the first polyol present in the amounts as now claimed.

The '900 patent is directed toward a hardener for the production of polyurethane shaped articles. The '900 patent does not disclose each and every feature of the invention

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as claimed. Specifically, the '900 patent does not disclose, teach, or suggest, the first polyol present in the amounts as now claimed.

The '165 publication generally discloses a preparation for a polyurethane foams. The '165 publication does not disclose each and every feature of the invention as claimed. Specifically, the '165 publication does not disclose the curing component as now claimed or the first polyol component as claimed.

In view of the amendments to the claim, none of the above references disclose each and every feature of the subject invention. Additionally, there is no teaching, suggestion, or motivation to combine the teachings of the references. Even if the references could be combined, the combination still does not disclose each and every feature as claimed. Therefore, it is believed that claims 1, 3-4, 6, 8-11, 13-14, 16-19, 21-29, 31, 34, 36-42, and 44 are allowable over these references.

Accordingly, it is respectfully submitted that the Application, as amended, is now presented in condition for allowance, which allowance is respectfully solicited. Applicant believes that no fees are due, however, if any become required, the Commissioner is hereby authorized to charge any additional fees or credit any overpayments to Deposit Account 08-2789.

Respectfully submitted

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